

**Current Claims**

1. (Original) An antenna adapted for a logging tool, comprising:  
a core;  
  
the core including an electrical conductor disposed thereon such that the antenna has a first magnetic dipole moment substantially perpendicular to a longitudinal axis of the core.
2. (Original) The antenna of claim 1 wherein the antenna is adapted to transmit or receive electromagnetic energy.
3. (Original) The antenna of claim 2 wherein the core consists of a dielectric material.
4. (Original) The antenna of claim 3 wherein the conductor is disposed on the outer surface of the core.
5. (Original) The antenna of claim 4 wherein the conductor is plated onto the core.
6. (Original) The antenna of claim 5 wherein the core includes an arcuate shaped outer surface.
7. (Original) The antenna of claim 6 wherein the core forms a surface of revolution.
8. (Original) The antenna of claim 7 wherein the core forms a cylinder having open ends.
9. (Original) The antenna of claim 4 wherein the conductor consists of a conductive material deposited on the core.
10. (Original) The antenna of claim 9 wherein the core includes an arcuate shaped outer surface.
11. (Original) The antenna of claim 10 wherein the core forms a surface of revolution.
12. (Original) The antenna of claim 11 wherein the core forms a cylinder having open ends.

13. (Original) The antenna of claim 4 further comprising a second electrical conductor disposed on the core such that the antenna has a second magnetic dipole moment substantially perpendicular to the longitudinal axis of the core.
14. (Original) The antenna of claim 13 wherein the second magnetic dipole moment is substantially perpendicular to the first magnetic dipole moment.
15. (Original) The antenna of claim 13 wherein the second conductor is plated onto the core.
16. (Original) The antenna of claim 13 wherein the second conductor consists of a conductive material deposited on the core.
17. (Original) The antenna of claim 13 further comprising another independent electrical conductor disposed on the core, the conductor adapted to alter the first or second magnetic moment.
18. (Original) The antenna of claim 17 wherein the independent conductor forms a closed loop.
19. (Original) The antenna of claim 17 wherein the independent conductor forms a disk.
20. (Original) A well logging tool comprising:
  - a support having at least one antenna mounted thereon; and
  - electrical circuitry coupled to the at least one antenna,
  - wherein the at least one antenna comprises a dielectric core, the core having an electrical conductor disposed thereon to form a conductive path, the conductive path arranged to have a first magnetic dipole moment substantially perpendicular to a longitudinal axis of the core.
21. (Original) The logging tool of claim 20 wherein the antenna is adapted to transmit or receive electromagnetic energy.
22. (Original) The logging tool of claim 21 wherein the conductor is plated onto the core.
23. (Original) The logging tool of claim 22 wherein the core forms a surface of revolution.

24. (Original) The logging tool of claim 23 wherein the core forms a cylinder having open ends.
25. (Original) The logging tool of claim 21 wherein the conductor consists of a conductive material deposited on the core.
26. (Original) The logging tool of claim 25 wherein the core forms a surface of revolution.
27. (Original) The logging tool of claim 26 wherein the core forms a cylinder having open ends.
28. (Original) The logging tool of claim 20 further comprising a second electrical conductor disposed on the core to form a conductive path, the conductive path arranged to have a second magnetic dipole moment substantially perpendicular to the longitudinal axis of the core.
29. (Original) The logging tool of claim 28 wherein the second magnetic dipole moment is substantially perpendicular to the first magnetic dipole moment.
30. (Original) The logging tool of claim 28 wherein the second conductor is plated onto the core.
31. (Original) The logging tool of claim 28 wherein the second conductor consists of a conductive material deposited on the core.
32. (Original) The logging tool of claim 28 further comprising another independent electrical conductor disposed on the core, the independent conductor adapted to alter the first or second magnetic moment.
33. (Original) The logging tool of claim 32 wherein the independent conductor forms a closed loop.
34. (Original) The logging tool of claim 32 wherein the independent conductor forms a disk.

35. (Original) The logging tool of claim 21 wherein the support is adapted for disposal within a well bore on one of a wireline, a drill collar, or coiled tubing.
36. (Original) A method of producing an antenna for a logging tool, comprising:
- (a) disposing an electrical conductor on a dielectric core, the conductor forming a conductive path arranged to have a first magnetic dipole moment substantially perpendicular to a longitudinal axis of the core; and
  - (b) adapting the electrical conductor to be coupled with independent circuitry.
37. (Original) The method of claim 36 wherein the antenna is adapted to transmit or receive electromagnetic energy.
38. (Original) The method of claim 37 wherein step (a) comprises plating the conductor onto the core.
39. (Original) The method of claim 38 wherein the core forms a surface of revolution adapted to be placed in juxtaposition with a curved surface.
40. (Original) The method of claim 39 wherein the core forms a cylinder having open ends.
41. (Original) The method of claim 37 wherein step (a) comprises depositing a conductive material onto the core to form the conductor.
42. (Original) The method of claim 41 wherein the core forms a surface of revolution adapted to be placed in juxtaposition with a curved surface.
43. (Original) The method of claim 42 wherein the core forms a cylinder having open ends.
44. (Original) The method of claim 36 further comprising disposing a second electrical conductor on the core such that the antenna has a second magnetic dipole moment substantially perpendicular to the longitudinal axis of the core.
45. (Original) The method of claim 44 wherein the second magnetic dipole moment is substantially perpendicular to the first magnetic dipole moment.

46. (Original) The method of claim 44 wherein disposing the second conductor comprises plating the conductor onto the core.
47. (Original) The method of claim 44 wherein disposing the second conductor comprises depositing a conductive material onto the core to form the conductor.
48. (Original) The method of claim 44 further comprising disposing another independent electrical conductor on the core, the conductor adapted to alter the first or second magnetic moment.
49. (Original) The method of claim 48 wherein the independent conductor forms a closed loop.
50. (Original) The method of claim 48 wherein the independent conductor forms a disk.